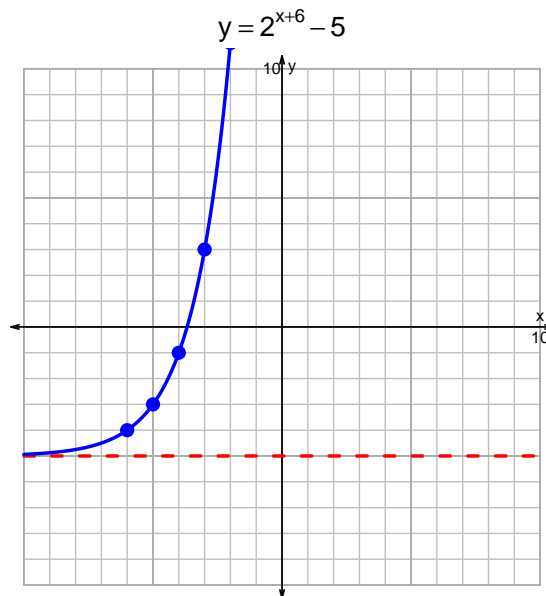
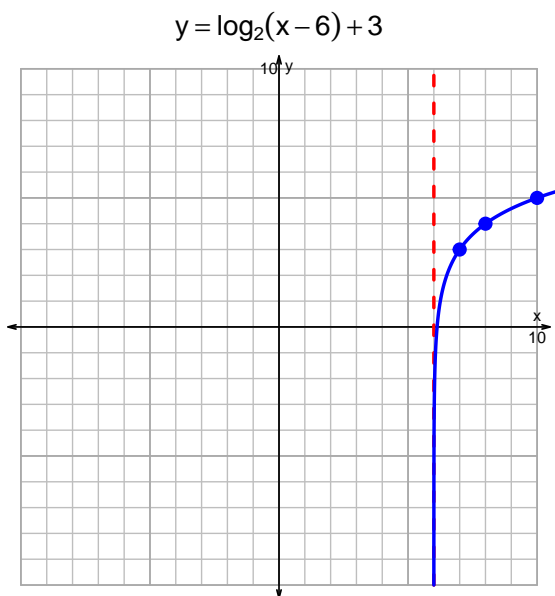


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v232)

1. Graph $y = \log_2(x - 6) + 3$ and $y = 2^{x+6} - 5$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-11 = \left(\frac{-3}{5}\right) \cdot 10^{-7t/4}$$

Divide both sides by $\frac{-3}{5}$.

$$\frac{11 \cdot 5}{3} = 10^{-7t/4}$$

Take log, base 10, of both sides.

$$\log_{10} \left(\frac{11 \cdot 5}{3} \right) = \frac{-7t}{4}$$

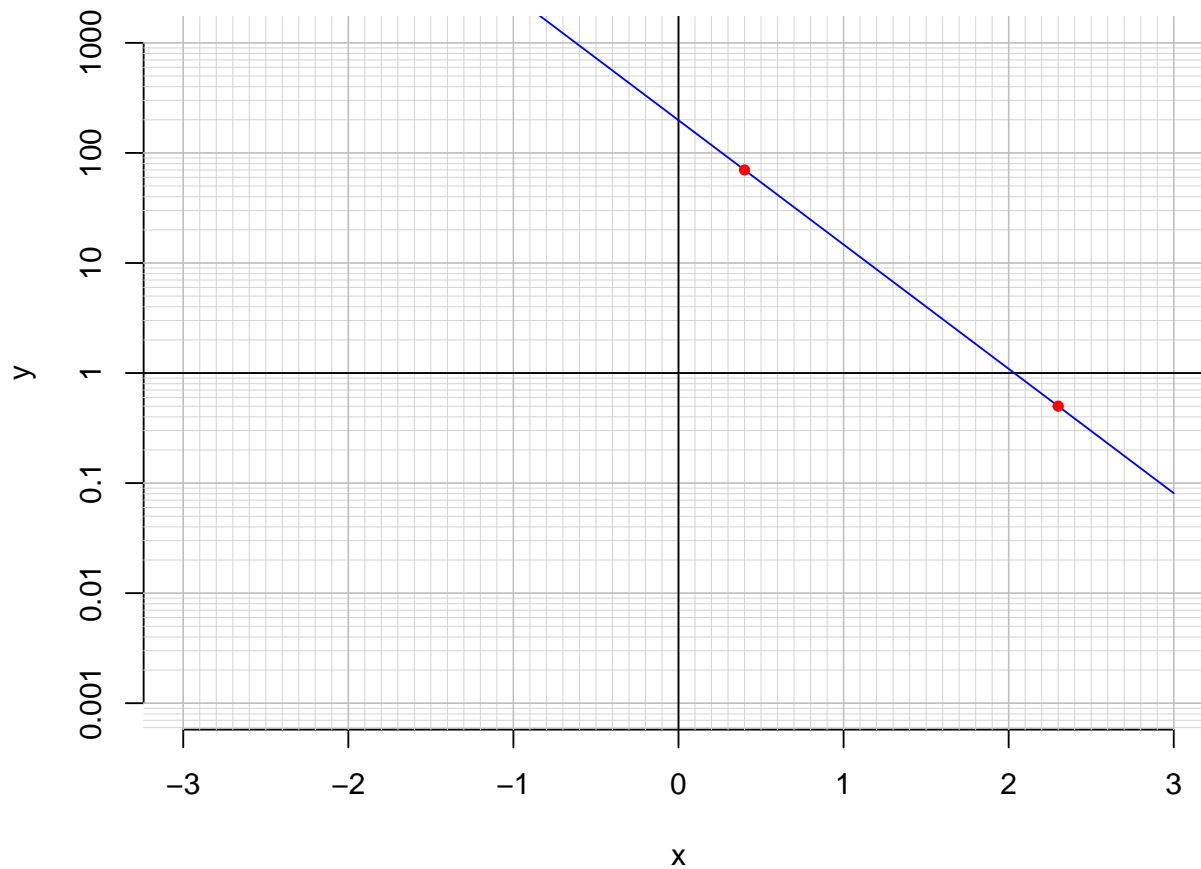
Divide both sides by $\frac{-7}{4}$.

$$\frac{-4}{7} \cdot \log_{10} \left(\frac{11 \cdot 5}{3} \right) = t$$

Switch sides.

$$t = \frac{-4}{7} \cdot \log_{10} \left(\frac{11 \cdot 5}{3} \right)$$

3. An exponential function $f(x) = 198 \cdot e^{-2.6x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(2.3)$.

$$f(2.3) = 0.5$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{-1}{2.6} \cdot \ln\left(\frac{x}{198}\right)$$

- c. Using the plot above, evaluate $f^{-1}(70)$.

$$f^{-1}(70) = 0.4$$